

THREE NEW SPECIES OF ACALYPTRATE FLIES (DIPTERA: LAUXANIIDAE AND PLATYSTOMATIDAE) FROM NORFOLK ISLAND

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Abstract

Two new species of *Poecilohetaerus* Hendel (Lauxaniidae), *P. trivittatus* and *P. ravus*, and one new species of *Pogonortalis* Hendel (Platystomatidae), *P. hians* are described from Norfolk Island with brief mention of distribution and habitat.

Introduction

Though there are numerous undescribed species of Lauxaniidae and Platystomatidae in collections, it is desirable at this stage to provide names for three species in order to draw attention to the interesting endemic elements of the Norfolk Island fauna. As there is a definite need for conservation of the island's flora and fauna as a whole, detailed study of the fauna, and in particular the insect fauna, needs to be done. This is emphasized by the fact that very few specimens of these three species are available for study.

The genus *Poecilohetaerus* occurs in New Zealand, Norfolk Island and Australia (including Lord Howe Island). The New Zealand species, *P. punctatifacies* Tonnoir and Malloch, was dealt with by Harrison (1959) and the Australian species are presently under review by Schneider. The genus *Pogonortalis* occurs in Australia (including Lord Howe Island), Indonesia and Guam (Lower, 1970) and has been introduced into North America.

The three species described in this paper appear to have a somewhat diverse range of habitats, all three being recorded from the settled area of Burnt Pine and two from rain forest areas on Mt. Pitt. The commonly occurring Australian species of the two genera, *Poecilohetaerus schineri* Hendel and *Pogonortalis doclea* Hendel show this same diversity of habitats although other undescribed species of *Poecilohetaerus* are much more restricted in habitat, most being confined to rain forest areas.

In the lists of type material the names of collections are abbreviated as follows: AM, Australian Museum, Sydney; ANIC, Australian National Insect Collection, C.S.I.R.O., Canberra.

Poecilohetaerus trivittatus n. sp.

MALE

Head. Frons dark brown, slightly paler in median region; a white, thickly pruinose band between eye and fronto-orbital region with white pruinescence extending on to fronto-orbital region. Anterior fronto-orbital bristle distinctly incurved but also slightly reclinate, about three-fourths length of reclinate posterior fronto-orbital; ocellar bristle thinner than and about three-fourths length of anterior fronto-orbital. Parafacial with dense white pruinescence continuous with band on frons; parafacial sutures dark brown; extension of cheek below eye brown with golden pruinescence, much wider

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than lateral extension of mesofacial below it; mesofacial flat, light brown, quite thickly covered with greyish-white pruinescence. Cheek with white, densely pruinescent band below eye, otherwise greyish brown with greyish-white pruinescence. Antenna with segments one and two light brown; segment three about one and one half times as long as wide, dark brown except for ventral basal fulvous region; arista dark brown, with longest pubescence about as long as diameter of base of arista. Prelabrum yellowish brown with greyish white pruinescence; palpus dark brown; proboscis yellowish.

Thorax. Mesoscutum and scutellum mid-brown dorsally with golden pruinescence becoming paler laterally; a broad, longitudinal, well defined white pruinescent vitta immediately lateral to line of dorsocentral bristles, extending from anterior margin of mesoscutum to posterolateral margin of scutellum; a median slightly less dense white pruinescent vitta between the two rows of intradorsocentral setulae, commencing at anterior margin of mesoscutum, discontinued posteriorly. Four strong dorsocentrals, the anterior one placed well in front of suture; only prescutellar acrostichal bristle developed; no anterior intra-alar. Pleura pale yellowish with thin white pruinescence. Legs entirely pale yellowish except for light brown patch on anterior side of distal end of fore femur. Wing, including veins, pale yellowish; veins 3 and 4 only slightly converging apically, the costal section between them 0.86 times length of discal crossvein. Haltere pale yellowish.

Abdomen. Shiny yellowish brown with thin white pruinescence. Post-abdomen (Fig. 1) with epandrium (tergite 9) pale, almost unpigmented, narrow dorsally, expanded ventrally, bearing scattered long bristles; surstylus broad at base, divided distally into narrow short, finger-like, mid-brown outer lobe bearing bristles about same length as those on epandrium and pale inner lobe which is longer and broader than outer lobe, tapered to blunt point and slightly upwardly turned apically; hypandrium (sternite 9) narrow, bearing long, narrow, tapered, almost unpigmented, posteroventrally directed gonite; cerci separate, light brown, rounded, bearing numerous quite long bristles; aedeagus broad, largely membranous, rounded and somewhat darkened distally.

Dimensions. Total length 3.8 mm; length of thorax 1.9 mm; length of wing 4.0 mm.

Type. Holotype ♂, Burnt Pine, Norfolk Island, 113 m, 17.vii.1968, M. S. Upton (ANIC).

Poecilohetaerus ravus n. sp.

MALE AND FEMALE

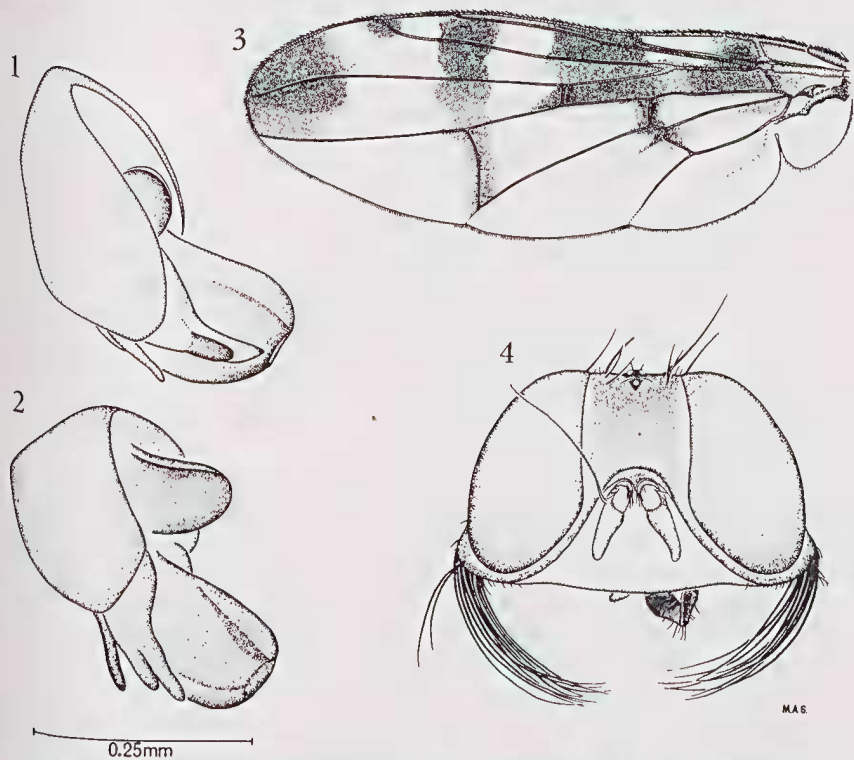
Similar to *P. trivittatus* and differing from the description given for that species as indicated below.

Head. Frons pale yellowish anteriorly, medially and around ocellar tubercle, becoming golden brown laterally towards and on fronto-orbital region. Extension of cheek below eye pale yellowish with white pruinescence, not darker, or only very slightly darker yellow than parafacial, not brown as in *P. trivittatus*; cheek otherwise entirely pale yellowish with white pruinescence and without clearly differentiated dense white pruinescence band below eye. Mesofacial

translucent, almost unpigmented with white, thin pruinescence; parafacial suture no darker than mesofacial; prelabrum of same colour as mesofacial with white pruinescence.

Thorax with broad, pale yellowish brown longitudinal band in region of dorsocentrals, extending from anterior margin of mesoscutum to posterolateral margin of scutellum; thin white pruinescence over this band but not forming well defined white vitta as in *P. trivittatus*; mesoscutum and scutellum otherwise mid brown dorsally, pale yellowish brown laterally; mesoscutum also with diffuse white pruinescent median vitta, but not confined by line of intradorsocentral setulae laterally as in *P. trivittatus* and extending entire length of mesoscutum; scutellum with whitish pruinescence dorsally. Wing with veins 3 and 4 variably converging apically, the costal section between them from 0.53 to 0.75 times length of discal crossvein.

Abdomen. Tergites dark brown posteriorly (one specimen with tergites more extensively dark brown). Male postabdomen (Fig. 2) similar to *P. trivittatus* but with surstylus not so broad basally, mid to dark brown with inner lobe of similar finger-like shape to outer lobe but slightly more tapered



Figs 1-4. (1, 2) *Pogonortalis* spp, male postabdomen, bristles omitted (1) *P. trivittatus*; (2) *P. ravus*. (3, 4) *Pogonortalis hians* (3) left wing; (4) head, anterior view.

apically and about one and one half times as long, much narrower than inner lobe of surstylus of *P. trivittatus*; hypandrial gonite mid brown; aedeagus mid to dark brown, much more sclerotized than in *P. trivittatus*.

Dimensions. Total length ♂ 3.5 mm, ♀ 3.1 - 3.6 mm; length of thorax ♂ 1.6 mm, ♀ 1.4 - 1.6 mm; length of wing ♂ 3.6 mm, ♀ 3.1 - 3.5 mm.

Types. *Holotype* ♀, Norfolk Island, 17.iv.1972, A. L. Dyce, H. A. Standfast, P. Ferrar (ANIC). *Paratypes*: 1 ♂, 1 ♀, same data as holotype (ANIC); 1 ♀, Burnt Pine, Norfolk Island, 113 m, vii.1968, M. S. Upton (ANIC); 1 ♀, Mt. Pitt, Norfolk Island, 260 m, vii.1968, M. S. Upton (AM).

COMPARATIVE NOTES

P. ravus is closely related to *P. trivittatus* from which it is distinguished by the colour differences on head, thorax and abdomen, more diffuse form of the pruinescent vittae on the mesoscutum, apical convergence of veins 3 and 4 of wing and, in the male, by narrower, finger-like shape of inner lobe of surstylus and sclerotized aedeagus. These two species are quite distinct from any Australian species, being much paler than all except one undescribed species which has a spotted abdomen and dark markings on legs, pleura and face. *P. punctatificies* (New Zealand) differs markedly in general coloration and in the presence of the two dark brown spots on the mesofacial.

Pogonortalis hians n. sp.

MALE AND FEMALE

Agreeing in most characters with *P. doclea* and with the detailed generic description given by Hendel (1914).

Head (Fig. 4) variable in shape, as in *P. doclea*, but in larger males much more expanded ventrally, with outer margin of cheek expanded beyond outline of eye (as seen from in front), so that fascicle of long curved bristles appears to arise from a lobe; postfrons parallel-sided, tawny, with ocellar and fronto-orbital plates black covered with grey pruinescence; orbital margins of postfrons creamy-pruinescent; face and adjacent membrane between prelabrum and epistomal margin pale buff (these areas brown-pigmented in *P. doclea*). Antenna tawny, with segment 3 becoming greyish brown beyond base. Palpus moderately narrow, brown, becoming tawny apically.

Thorax with predominantly black to brown-black ground colour; posterior notopleural callus, part of humeral callus, and an area behind postalar bristle yellowish brown; mesopleuron becoming yellowish brown posteriorly, and sometimes also anteriorly; pteropleuron with variable yellowish brown zone on upper part; mesoscutum largely covered with ochraceous pruinescence, least noticeable near posterolateral corners; scutellum with thin ochraceous pruinescence from scutellar suture to middle of dorsal surface, not extending to lateral parts, elsewhere shining black; pleura with pale grey pruinescence on much of pteropleuron, a large part of mesopleuron excluding anterior and ventral margins, pleurotergite, and part of hypopleuron. Legs yellowish brown to tawny; femora darker in part; tarsi fulvous, becoming brown distally; fore femur with an outstanding strong black posteroventral bristle at apical third, other ventral

bristles weaker and mostly pale; hind femur in both sexes with sharp longitudinal anteroventral ridge distally, which at its broadest point forms an incipient tooth (this ridge represented by little more than a rounded gibbosity in *P. doclea*); hind tibia rather strongly curved. Wing (Fig. 3) with venation very similar to that of *P. doclea* but differently marked; a brown sub-basal patch covering basal two fifths of first basal cell, extending forward into basal part of second costal cell and posteriorly to anterior basal part of anal cell; an irregular brown stigmatal band from basal part of the long, brown stigmatal section of subcostal cell, extending broadly across marginal and submarginal cells, filling distal two fifths of first basal cell, extending narrowly over anterior crossvein into base of first posterior cell, contracted behind vein 4 and narrowly surrounding basal and anal crossveins; a discal band extending from distal end of vein 1 to distal end of vein 5, paler posteriorly; a small brown spot at distal end of vein 2; a large apical brown spot covering distal extremities of submarginal, first posterior, and second posterior cells, much paler in the last; squama reduced to a linear fringe, pale buff. Haltere fulvous.

Abdomen with tergites shining black; hairs partly black, partly pale yellowish; in male tergite 5 about 1.5 - 1.7 times as long as tergite 4.

Dimensions. Total length, ♂ 4.4 - 6.6 mm, ♀ 4.5 - 5.7 mm; length of thorax, ♂ 1.8 - 2.5 mm, ♀ 1.9 - 2.5 mm; length of wing, ♂ 4.0 - 5.7 mm, ♀ 4.5 - 5.9 mm.

Types. *Holotype* ♀, Mount Pitt, Norfolk Island, 300 m, 17.vii.1968, M. S. Upton (ANIC). *Paratypes:* 1 ♀, Mount Pitt, 260 m, vii.1968, M. S. Upton (ANIC); 1 ♀, Burnt Pine, Norfolk Island, 113 m, vii.1968, M. S. Upton (ANIC); 3 ♂, Norfolk Island, xii.1955, anon. (2 ♂, ANIC; 1 ♂, AM).

COMPARATIVE NOTES

P. hians is closely related to *P. doclea* (Australian mainland) and *P. howei* Paramonov (1957) (Lord Howe Island). It is readily distinguished by the much more extensive wing markings (Fig. 3), black, largely glossy scutellum, and more extensively pruinulent mesopleuron.

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